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U.S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371	1454.1086/RAG **09/913487**

INTERNATIONAL APPLICATION NO. PCT/DE00/00348	INTERNATIONAL FILING DATE 4 February 2000	PRIORITY DATE CLAIMED 15 February 1999

TITLE OF INVENTION
METHOD AND SYSTEM FOR STORING AND ACCESSING AN OBJECT BY A COMPUTER

APPLICANT(S) FOR DO/EO/US
Hans-Georg BAUMGARTEN et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. [X] This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.
2. [X] This is an express request to immediately begin national examination procedures (35 U.S.C. 371(f)).
3. [X] The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
4. [X] A copy of the International Application as filed (35 U.S.C. 371(c)(2))
    a. [X] is transmitted herewith (required only if not transmitted by the International Bureau).
    b. [ ] has been transmitted by the International Bureau.
    c. [ ] is not required, as the application was filed in the United States Receiving Office (RO/US).
5. [X] A translation of the International Application into English (35 U.S.C. 371(c)(2)).
6. [ ] Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
    a. [ ] are transmitted herewith (required only if not transmitted by the International Bureau).
    b. [ ] have been transmitted by the International Bureau.
    c. [ ] is not required, as the application was filed in the United States Receiving Office (RO/US)
7. [ ] A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
8. [ ] An oath or declaration of the inventor (35 U.S.C. 371(c)(4)).
9. [ ] A translation of the Annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 10-15 below concern document(s) or information included:

10.[X] An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
11.[ ] An assignment document for recording.
    Please mail the recorded assignment document to:
    a. [ ] the person whose signature, name & address appears at the bottom of this document.
    b. [ ] the following:
12. [X] A preliminary amendment.
13. [X] A substitute specification
14. [ ] A change of power of attorney and/or address letter.
15. [ ] Other items or information:

[X] The U.S. National Fee (35 U.S.C. 371(c)(1)) and other fees as follows:

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS	14 -20 =	0	x $ 0.00	0.00
	INDEPENDENT CLAIMS	5 -3 =	2	x $ 80.00	160.00
	MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ $270.00	0.00

BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(4):

[ ] Neither international preliminary examination fee (37 CFR 1.482) nor

international search fee (37 CFR 1.445(a)(2)) paid to USPTO $1,000

[X] International preliminary examination fee (37 C.F.R. 1.482) not paid to USPTO but International

Search Report prepared by the EPO or JPO.. ....$ 860

[ ] International preliminary examination fee (37 C.F.R. 1.482) not paid to USPTO but international

search fee (37 C.F.R. 1.445(a)(2) paid to USPTO...................$ 710

[ ] International preliminary examination fee paid to USPTO (37 CFR 1.482)

but all claims did not satisfy provision of PCT Article 33(1)-(4)..............$ 690

[ ] International preliminary examination fee paid to USPTO (37 CFR 1.482)

and all claims satisfied provisions of PCT Article 33(2) to (4) ....$ 100

860.00

Surcharge of $130 for furnishing the National fee or oath or declaration later than
[ ] 20 [ ] 30 mos. from the earliest claimed priority date (37 CFR 1.482(e)).

0.00

	TOTAL OF ABOVE CALCULATIONS	1020.00

Reduction by 1/2 for filing by small entity, if applicable. Affidavit must be filed also. (Note 37 CFR 1.9, 1.27, 1.28.)

	SUBTOTAL	1020.00

Processing fee of $130 for furnishing the English Translation later than
[ ] 20 [ ] 30 mos. from the earliest claimed priority date (37 CFR 1.482(f)).

	TOTAL NATIONAL FEE	1020.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)).	+	.00
	TOTAL FEES ENCLOSED	1020.00

a. [X] A check in the amount of $ 1020.00 to cover the above fees is enclosed.

b. [ ] Please charge my Deposit Account No. 19-3935 in the Amount of $ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. [X] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-3935. A duplicate copy of this sheet is enclosed.

21171

PATENT TRADEMARK OFFICE

8/15/01
DATE

Richard A. Gollhofer
REGISTRATION NO. 31,106

2001 Staas & Halsey LLP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Hans-Georg BAUMGARTEN et al.

Serial No. 09/913,487   Group Art Unit:

Confirmation No.

Filed: August 15, 2001   Examiner:

For: METHOD AND SYSTEM FOR STORING AND ACCESSING AN OBJECT BY A
        COMPUTER (as amended)

SUPPLEMENTAL PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

        Before examination of the above-identified application, please amend the application as follows:

IN THE TITLE:

        Please REPLACE the originally filed title with the following:

        -- METHOD AND SYSTEM FOR STORING AND ACCESSING AN OBJECT BY A

COMPUTER--

IN THE SPECIFICATION:

        Please REPLACE the title in the Substitute Specification with the following:

        -- METHOD AND SYSTEM FOR STORING AND ACCESSING AN OBJECT BY A

COMPUTER--

IN THE CLAIMS:

        Please AMEND the claims in accordance with the following

        22. (AS ONCE AMENDED) A method for accessing a mapping object by a computer,

comprising:

determining an index from at least one parameter of a process to at least one of transform and convert a predefined digital image, the at least one parameter determining a mapping of the mapping object;

determining an address of the mapping object by reference to the index;

accessing the mapping object, if the mapping object can be determined with respect to the index;

determining and accessing a new mapping object from the predefined digital image according to the process, if the mapping object cannot be determined with respect to the index.

29. (AS ONCE AMENDED) A system for accessing a mapping object by a computer, comprising:

a processor unit

to determine an index from at least one parameter of a process to at least one of transform and convert a predefined digital image, the at least one parameter determining a mapping of the mapping object,

to determine an address of the mapping object by reference to the index,

to access the mapping object, if the mapping object can be determined with respect to the index, and

to determine and access a new mapping object from the predefined digital image according to the process, if the mapping object cannot be determined with respect to the index.

REMARKS

This Preliminary Amendment is submitted to improve the form of the English translation as filed. It is respectfully requested that this Preliminary Amendment be entered in the above-referenced application.

In accordance with the foregoing, claims 22 and 29 have been amended. Thus, claims 16-28 are pending and are under consideration.

If there are any questions regarding these matters, such questions can be addressed by telephone to the undersigned. Otherwise, an early action on the merits is respectfully solicited.

If any further fees are required in connection with the filing of this Preliminary Amendment, please charge same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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Date: 11/21/01

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please AMEND the title on page 1 of the Substitute Specification as follows:

METHOD AND SYSTEM FOR STORING AND ACCESSING AN OBJECT [OF] BY A COMPUTER

IN THE CLAIMS:

Please AMEND the claims in accordance with the following

22. (ONCE AMENDED) A method for accessing a mapping object by a computer, comprising:

determining an index from at least one parameter of a process to at least one of transform and convert a predefined digital image, the at least one parameter determining a mapping of the mapping object;

[dereferencing] determining an address of the mapping object by reference to the index;

accessing the mapping object, if the mapping object can be determined with respect to the index;

determining and accessing a new mapping object from the predefined digital image according to the process, if the mapping object cannot be determined with respect to the index.

29. (ONCE AMENDED) A system for accessing a mapping object by a computer, comprising:

a processor unit

to determine an index from at least one parameter of a process to at least one of transform and convert a predefined digital image, the at least one parameter determining a mapping of the mapping object,

to [dereference] determine an address of the mapping object by reference to the index,

to access the mapping object, if the mapping object can be determined with respect to the index, and

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to determine and access a new mapping object from the predefined digital image according to the process, if the mapping object cannot be determined with respect to the index.

Docket No. 1454.1086/RAG

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Hans-Georg BAUMGARTEN et al.

Serial No. (Unassigned)	Group Art Unit: To be assigned

Confirmation No.

Filed: (concurrently)	Examiner: To be assigned

For: METHOD AND SYSTEM FOR STORING AND ACCESSING AN OBJECT BY A
COMPUTER

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Before examination of the above-identified application, please amend the application as follows:

IN THE SPECIFICATION

Please REPLACE the pending specification with the Substitute Specification attached hereto.

IN THE ABSTRACT

Please REPLACE the originally filed Abstract with the enclosed Substitute Abstract.

IN THE CLAIMS

Please CANCEL claims 1-15 without prejudice or disclaimer of any of the subject matter claimed therein and ADD new claims in accordance with the following:

16. A method for accessing a mapping object by a computer, comprising:

determining to retrieve the mapping object when a digital image is modified by a predefined process to at least one of transform and convert the digital image, the predefined process having at least one parameter which determines a mapping of the mapping object;

determining an index by reference to the at least one parameter; and

referencing the mapping object by reference to the index, when the mapping object is stored in a memory.

17. The method as claimed in claim 16, wherein the digital image is modified by a plurality of processes.

18. The method as claimed in claim 16, wherein the index is determined as a uniquely defined index.

19. The method as claimed in claim 16, wherein said referencing includes accessing the index stored with an entry address in the memory for the mapping object.

20. The method as claimed in claim 16, wherein said referencing includes accessing the index for the mapping object in the memory.

21. The method as claimed in claim 16, further comprising compressing and then storing the mapping object.

22. A method for accessing a mapping object by a computer, comprising:
   determining an index from at least one parameter of a process to at least one of transform and convert a predefined digital image, the at least one parameter determining a mapping of the mapping object;
   dereferencing of the mapping object by reference to the index;
   accessing the mapping object, if the mapping object can be determined with respect to the index;
   determining and accessing a new mapping object from the predefined digital image according to the process, if the mapping object cannot be determined with respect to the index.

23. The method as claimed in claim 22, wherein a plurality of processes are used for one of determining indices and determining the new mapping object from the predefined digital image.

24. The method as claimed in claim 23, wherein the mapping object is accessed if the at least one parameter corresponds, within a predefined tolerance, to at least one stored parameter of the mapping object.

25. The method as claimed in claim 23, wherein the mapping object includes information

26. The method as claimed in claim 23, wherein the mapping object includes another digital image.

27. The method as claimed in claim 23, wherein the at least one parameter is a specific variable for influencing image data of the predefined digital image.

28. A system for accessing a mapping object by a computer, comprising:
a memory to store the mapping object; and
a processor unit to determine to retrieve the mapping object by reference to an index when a digital image is modified by a predefined process to at least one of transform and convert the digital image, the predefined process having at least one parameter which determines the index and a mapping of the mapping object.

29. A system for accessing a mapping object by a computer, comprising:
a processor unit
to determine an index from at least one parameter of a process to at least one of transform and convert a predefined digital image, the at least one parameter determining a mapping of the mapping object,
to dereference the mapping object by reference to the index,
to access the mapping object, if the mapping object can be determined with respect to the index, and
to determine and access a new mapping object from the predefined digital image according to the process, if the mapping object cannot be determined with respect to the index.

REMARKS

This Preliminary Amendment is submitted to improve the form of the English translation as filed. It is respectfully requested that this Preliminary Amendment be entered in the above-referenced application.

In accordance with the foregoing, claims 1-15 have been canceled and claims 16-28 have been added. Thus, claims 16-28 are pending and are under consideration.

A substitute specification is also being filed herewith. The substitute specification is accompanied by a marked-up copy of the original specification. No new matter has been added.

If there are any questions regarding these matters, such questions can be addressed by telephone to the undersigned. Otherwise, an early action on the merits is respectfully solicited.

If any further fees are required in connection with the filing of this Preliminary Amendment, please charge same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: 8/15/01

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SUBSTITUTE SPECIFICATION

TITLE OF THE INVENTION

METHOD AND SYSTEM FOR STORING AND ACCESSING AN OBJECT OF A COMPUTER

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001]   The invention relates to a method and system for storing and accessing an object by a computer.

2. Description of the Related Art

[0002]   Such a method and system are known from computer technology or from commercially available computers. They permit data to be stored on different storage media, for example in a main memory or on a hard disk. Nowadays a large number of types of memory are available, such as: RAM, ROM, hard disk, diskette, moving head disk, CDROM, etc.

[0003]   When processing large quantities of data, for example during digital image processing, the general aim is to ensure rapid processing in order, despite the requirement for real-time capability with moving images, to be able to carry out a large number of calculations, for example, to ensure high image quality in the event of a transmission channel experiencing interference, or to make optimum use of a small bandwidth with images with as high a resolution as possible.

[0004]   In such a context, an image is modified by what is referred to as a converter which transforms an image into a mapping determined by the values of the parameter as a function of, in most cases, a plurality of parameters. Such transformation/mapping requires a period of time which cannot be ignored, in particular when processing images. If an image which is modified according to the predefined definition is to be converted at every access operation, there is a significant loss of performance, which considerably adversely affects the efficiency of a system particularly in the case of image processing. This is also aggravated by the fact that in numerous applications a plurality of the abovementioned converters are connected in series, and accordingly a large number of mappings have to be carried out.

SUMMARY OF THE INVENTION

[0005] An objective of the invention is to provide a mechanism which permits a significant saving in time when accessing an object, and in which in particular the object is stored in an advantageous way.

[0006] To achieve this objective, a method for storing an object by a computer includes determining a second object by a first object being modified by a predefined process which has at least one parameter. An index is determined by reference to the at least one parameter. The second object is stored in a memory with referencing of the second object being carried out by reference to its index.

[0007] In one embodiment modification is carried out by a plurality of processes. Here, each of the plurality processes can have one or more parameters.

[0008] Preferably the index is determined as a uniquely defined index. The uniquely defined index permits an unmistakable identification of the stored second object.

[0009] It is to be noted here that referencing is understood to be referral to the stored object, preferably by the index. This referencing can be carried out by storing the index in conjunction with an entry address for the stored second object. This can be carried out, for example, by using a table, and when the index is accessed the entry address for the second object which is being looked for in the memory is obtained from the table. This entry address can be implemented as an offset or as a pointer to the storage location.

[0010] Alternatively, the referencing can be carried out by storing the index together with the second object in the memory. In this case, an access can take place by searching the memory for the index.

[0011] A combination of the two aforesaid referencing possibilities is also possible.

[0012] In addition, it is possible that before the second object is stored it is compressed. The compression advantageously results in a significant reduction in the storage space required to store the second object.

[0013] To achieve the objective, a method for accessing an object by means of a computer is also disclosed in which an index is determined from at least one parameter of a process. This

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index is used to dereference a second object. If a stored second object can be found with respect to the index, this second object is accessed; if a second object cannot be determined with respect to the index, a predefined first object is determined by means of the process while taking into account its at least one parameter with respect to a new second object. The access is made to the newly determined second object.

[0014]   One development consists in the fact that the new second object is stored in accordance with the method described above.

[0015]   In particular, instead of the one process, a plurality of processes can be used, each of the plurality of processes having a predefinable number of parameters.

[0016]   There is also an embodiment in which an already stored object can also be accessed if the at least one parameter is similar to the at least one parameter of the already stored second object within a predefined tolerance. This has the particular advantage that within this tolerance an already stored second object is accessed in all cases, and the second object does not need to be newly determined or calculated specially.

[0017]   There is also a development in which the object contains information which can be displayed.

[0018]   In particular, the object can be a digital image.

[0019]   An additional embodiment consists in the fact that the process is a converter for modifying image data. In this case the at least one parameter of the process (of the converter here) is a specific variable for influencing this image data.

[0020]   A significant advantage of the invention consists in the fact that the direct memory access to an object which has already been determined eliminates the laborious and time-consuming new calculation (by means of the at least one process). The direct access to the memory is in all cases quicker and the elimination of the new determination has positive effects on the performance and the resources of the system.

[0021]   It is to be noted here that the aforesaid memory comprises, in particular, the customary types of memory: RAM, mass storage, hard disk, etc.

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[0022]   To achieve the objective, a system for storing an object by a computer is also disclosed in which a processor unit is provided which is configured in such a way that

a) a second object can be determined by a first object being modified by a predefined process which has at least one parameter;

b) an index can be determined by reference to the at least one parameter;

c) the second object is stored in a memory, referencing of the second object being carried out by reference to its index.

[0023]   To achieve the objective, a system for accessing an object by a computer is also disclosed, which has a processor unit configured in such a way that

a) an index can be determined from at least one parameter of a process;

b) dereferencing of a second object takes place by reference to the index;

c) if a stored second object can be determined with respect to the index, this second object is accessed;

d) if a second object cannot be determined with respect to the index, a new second object is determined from a predefined first object by means of the process, and this newly determined second object is accessed.

[0024]   These arrangements are in particular suitable for carrying out the method according to the invention or one of its developments explained above.

[0025]   Exemplary embodiments of the invention are presented and explained below with reference to the drawing.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026]   In the drawings:

Fig. 1 is a block diagram of a method for storing an object according to the present invention;

Fig. 2 is a memory diagram showing a first referencing possibility;

Fig. 3 is a memory diagram showing a second reference possibility;

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Fig. 4 is a flowchart illustrating an access to an object; and

Fig. 5 is a block diagram of a processor unit in a computer.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0027]   Fig. 1 is a block diagram of a method for storing an object. A first object 101 is firstly subjected to conversion with the parameters p1, p2, p3 in a converter 104 in a processing block 103. Compression (cf. block 105) and determining of an index (cf. block 106) are then carried out. During the determining of an index a value (index) is uniquely determined from the first object and the method of conversion (number of processes with values of the respective parameters). To do this, an identification variable 108 is preferably determined from the first object which variable is also taken into account in the determining of the index. The identification variable 108 permits uniquely defined assignment or virtually uniquely defined assignment of the first object 101 to the identification variable is 108. Various methods of doing this are known, for example an assignment by an Internet link (URL address). The index determining means 106 supplies a uniquely defined index 107, the compression means 105 supplies a second object 102 on which the conversion 104 and compression 105 have been performed.

[0028]   Fig. 2 and Fig. 3 each show a memory diagram of a referencing possibility. Fig. 2 contains a storage area 201 in which the second object (indicated here by the area 203) is stored. The index 202 (corresponds to the index 107 determined according to Fig. 1) is preferably located at the start of the stored second object 203. By reference to the index 202, it is possible to find the second object again in the storage area 201.

[0029]   Another possibility is shown by Fig. 3. To access a storage area 301 quickly, a table 305 is provided which comprises an index field 303 and a pointer 302. The pointer 302 points directly to an address within the storage area 301. Instead of the pointing mechanism, an offset, which to the same extent differentiates, in the storage area 301, the entry address for the object associated with index 303,can form in the table entry 302. In Fig. 3, the second object is indicated by the area 304, and the pointer 302 points to the start of the second object 304. If the second object 304 is being looked for by reference to its index 303, all that is necessary is to search through the table 305 for the index, and the field of the pointer 302 which is associated with the index directly supplies the start address within the storage area 301 for the second object 304.

[0030]　Fig. 4 is a flowchart which illustrates an access to an object. A first object 401 and a conversion function (a process) 402 with parameters p1, p2 and p3 are given. By reference to the first object, an identification variable 403 is determined, and a subindex Tlx 404 is determined from the conversion function which can optionally include a plurality of converters. Both variables 403 and 404 together yield the index Ix. The index Ix is used to look for a second object which has already been stored in a storage area and which results from the first object after the process 402 has been carried out (cf. 405). If the search is successful, the found object is accessed (cf. block 407), and otherwise the second object is newly calculated and this newly calculated object is accessed (cf. block 408). The decision as to whether an access or a new calculation must take place is made in a block 406.

[0031]　Fig. 5 is a block diagram of a processor unit PRZE. The processor unit PRZE comprises a processor CPU, a memory SPE and an input/output interface IOS which is used in different ways via an interface IFC: Via a graphic interface, output can be viewed on a monitor MON and/or is issued on a printer PRT. An entry is made via a mouse MAS or a keyboard TAST. The processor unit PRZE also has a data bus BUS, which ensures the connection of a memory MEM, of the processor CPU and of the input/output interface IOS. Furthermore, additional components, for example additional memory, data memory (hard disk) or scanner, can be connected to the data bus BUS.

SUBSTITUTE ABSTRACT

ABSTRACT OF DISCLOSURE

METHOD AND SYSTEM FOR STORING AND
ACCESSING AN OBJECT BY A COMPUTER

A method for storing an object by a computer is disclosed, in which a second object is determined by a first object being modified by a predefined process which has at least one parameter. An index is determined by reference to the at least one parameter. The second object is stored in a memory, referencing of the second object being carried by reference to its index.

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MARKED-UP COPY OF SUBSTITUTE SPECIFICATION

[Description]

TITLE OF THE INVENTION

METHOD AND [ARRANGEMENT] <u>SYSTEM</u> FOR STORING
AND ACCESSING AN OBJECT [BY MEANS] OF A COMPUTER

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001]   The invention relates to a method and [an arrangement] <u>system</u> for storing and accessing an object by [means of] a computer.

2. Description of the Related Art

[0002]   Such a method and [arrangement] <u>system</u> are known from computer technology or from commercially available computers. They permit data to be stored on different storage media, for example in a main memory or on a hard disk. Nowadays a large number of types of memory are available, [a selection is] <u>such as</u>: RAM, ROM, hard disk, diskette, moving head disk, CDROM<u>, etc</u>.

[0003]   When processing large quantities of data, for example during digital image processing, the general aim is to ensure rapid processing in order, despite the requirement for real-time capability with moving images, to be able to carry out a large number of calculations [in order], for example, to ensure high image quality in the event of a transmission channel experiencing interference, or [in order to be able] to make optimum use of a small bandwidth with images with as [a] high <u>a</u> resolution as possible.

[0004]   In such a context, an image is modified by [means of] what is referred to as a converter which transforms an image into a mapping determined by the values of the parameter as a function of, in most cases, a plurality of parameters. Such transformation/mapping requires a period of time which cannot be ignored, in particular when processing images. If an image which is modified according to the predefined definition is to be converted at every access operation, there is a significant loss of performance, which considerably adversely affects the efficiency of a system particularly in the case of image processing. This is also aggravated by

the fact that in numerous applications a plurality of the abovementioned converters are connected in series, and accordingly a large number of mappings have to be carried out.

SUMMARY OF THE INVENTION

[0005] [The] An objective of the [inventive consists in disclosing] invention is to provide a mechanism which permits a significant saving in time when accessing an object, and in which in particular the object is stored in an advantageous way.

[0006] [This objective is achieved in accordance with the features of the independent patent claims. Developments of the invention can be found in the dependent claims]

[0007] [In order to] To achieve [the] this objective, a method for storing an object by [means of] a computer [is disclosed in which] includes determining a second object [is determined] by a first object being modified by [means of] a predefined process which has at least one parameter. An index is determined by reference to the at least one parameter. The second object is stored in a memory[,] with referencing of the second object being carried out by reference to its index.

[0008] [One] In one embodiment [consists in] modification [being] is carried out by [means of] a plurality of processes. Here, each of the plurality processes can have one or more parameters.

[0009] [One development consists in the fact that] Preferably the index is determined as a uniquely defined index. The uniquely defined index permits an unmistakable identification of the stored second object.

[0010] It is to be noted here that referencing is understood to be referral to the stored object, preferably by the index. This referencing can be carried out by storing the index in conjunction with an entry address for the stored second object. This can be carried out, for example, by [means of] using a table, and when the index is accessed the entry address for the second object which is being looked for in the memory is obtained from the table. This entry address can be implemented as an offset or as a pointer to the storage location.

[0011] Alternatively, the referencing can be carried out by storing the index together with the second object in the memory. In this case, an access can take place by searching the memory for the index.

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[0012] A combination of the two aforesaid referencing possibilities is also possible.

[0013] In addition, [there is a development in which] it is possible that before the second object is stored it is compressed. The compression advantageously results in a significant reduction in the storage space required to store the second object.

[0014] [In order to] To achieve the objective, a method for accessing an object by means of a computer is also disclosed in which an index is determined from at least one parameter of a process. This index is used to dereference a second object. If a stored second object can be found with respect to the index, this second object is accessed; if a second object cannot be determined with respect to the index, a predefined first object is determined by means of the process while taking into account its at least one parameter with respect to a new second object. The access is made to the newly determined second object.

[0015] One development consists in the fact that the new second object is stored in accordance with the method described above.

[0016] In particular, instead of the one process, a plurality of processes can be used, each of the plurality of processes having a predefinable number of parameters.

[0017] There is also an embodiment in which an already stored object can also be accessed if the at least one parameter is similar to the at least one parameter of the already stored second object within a predefined tolerance. This has the particular advantage that within this tolerance an already stored second object is accessed in all cases, and the second object does not need to be newly determined or calculated specially.

[0018] There is also a development in which the object contains information which can be displayed.

[0019] In particular, the object can be a digital image.

[0020] An additional embodiment consists in the fact that the process is a converter for modifying image data. In this case the at least one parameter of the process (of the converter here) is a specific variable for influencing this image data.

[0021] A significant advantage of the invention consists in the fact that the direct memory access to an object which has already been determined eliminates the laborious and time-

consuming new calculation (by means of the at least one process). The direct access to the memory is in all cases quicker and the elimination of the new determination has positive effects on the performance and the resources of the system.

[0022] It is to be noted here that the aforesaid memory comprises, in particular, the customary types of memory: RAM, mass storage, hard disk, etc.

[0023] [In order to] To achieve the objective, [an arrangement] a system for storing an object by [means of] a computer is also disclosed in which [arrangement] a processor unit is provided which is configured in such a way that

a) a second object can be determined by a first object being modified by a predefined process which has at least one parameter;

b) an index can be determined by reference to the at least one parameter;

c) the second object is stored in a memory, referencing of the second object being carried out by reference to its index.

[0024] [In order to] To achieve the objective, [an arrangement] a system for accessing an object by [means of] a computer is also disclosed, which [arrangement] has a processor unit [which is] configured in such a way that

a) an index can be determined from at least one parameter of a process;

b) dereferencing of a second object takes place by reference to the index;

c) if a stored second object can be determined with respect to the index, this second object is accessed;

d) if a second object cannot be determined with respect to the index, a new second object is determined from a predefined first object by means of the process, and this newly determined second object is accessed.

[0025] These [arrangements] systems are in particular suitable for carrying out the method according to the invention or one of its developments explained above.

4

[0026]   Exemplary embodiments of the invention are presented and explained below with reference to the drawing.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027]   In [said drawings] the drawings:

Fig. 1 [shows an outline with logic blocks] is a block diagram of a method for storing an object according to the present invention;

Fig. 2 [shows an outline with] is a memory diagram showing a first referencing possibility;

Fig. 3 [shows an outline with] is a memory diagram showing a second reference possibility;

Fig. 4 [shows an outline] is a flowchart illustrating an access to an object;

Fig. 5 [shows] is a block diagram of a processor unit [which can be used as] in a computer.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0028]   Fig. 1 [illustrates an outline with logic blocks] is a block diagram of a method for storing an object. A first object 101 is firstly subjected to conversion with the parameters p1, p2, p3 in a converter 104 in a processing block 103. Compression (cf. block 105) and determining of an index (cf. block 106) are then carried out. During the determining of an index a value (index) is uniquely determined from the first object and the method of conversion (number of processes with values of the respective parameters). To do this, an identification variable 108 is preferably determined from the first object which variable is also taken into account in the determining of the index. The identification variable 108 permits uniquely defined assignment or virtually uniquely defined assignment of the first object 101 to the identification variable is 108. Various methods of doing this are known, for example an assignment by [means of] an Internet link (URL address). The index determining means 106 supplies a uniquely defined index 107, the compression means 105 supplies a second object 102 on which the conversion 104 and compression 105 have been performed.

[0029]   Fig. 2 and Fig. 3 each show [an outline with] a memory diagram of a referencing possibility. Fig. 2 contains a storage area 201 in which the second object (indicated here by the area 203) is stored. The index 202 (corresponds to the index 107 determined according to Fig.

1) is preferably located at the start of the stored second object 203. By reference to the index 202, it is possible to find the second object again in the storage area 201.

[0030]   Another possibility is shown by Fig. 3. [: in order to] To access a storage area 301 quickly, a table 305 is provided which comprises an index field 303 and a pointer 302. The pointer 302 points directly to an address within the storage area 301. Instead of the pointing mechanism, an offset, which to the same extent differentiates, in the storage area 301, the entry address for the object associated with index 303,can form in the table entry 302. In Fig. 3, the second object is indicated by the area 304, and the pointer 302 points to the start of the second object 304. If the second object 304 is being looked for by reference to its index 303, all that is necessary is to search through the table 305 for the index, and the field of the pointer 302 which is associated with the index directly supplies the start address within the storage area 301 for the second object 304.

[0031]   Fig. 4 [shows an outline] is a flowchart which illustrates an access to an object. A first object 401 and a conversion function (a process) 402 with parameters p1, p2 and p3 are given. By reference to the first object, an identification variable 403 is determined, and a subindex TIx 404 is determined from the conversion function which can optionally include a plurality of converters. Both variables 403 and 404 together yield the index Ix. The index Ix is used to look for a second object which has already been stored in a storage area and which results from the first object after the process 402 has been carried out (cf. 405). If the search is successful, the found object is accessed (cf. block 407), and otherwise the second object is newly calculated and this newly calculated object is accessed (cf. block 408). The decision as to whether an access or a new calculation must take place is made in a block 406.

[0032]   Fig. 5 [illustrates] is a block diagram of a processor unit PRZE. The processor unit PRZE comprises a processor CPU, a memory SPE and an input/output interface IOS which is used in different ways via an interface IFC: Via a graphic interface, output can be viewed on a monitor MON and/or is issued on a printer PRT. An entry is made via a mouse MAS or a keyboard TAST. The processor unit PRZE also has a [databus] data bus BUS, which ensures the connection of a memory MEM, of the processor CPU and of the input/output interface IOS. Furthermore, additional components, for example additional memory, data memory (hard disk) or scanner, can be connected to the [databus] data bus BUS.

6

GR 99 P 1196

Description

Method and arrangement for storing and accessing an
object by means of a computer

5

The invention relates to a method and an arrangement
for storing and accessing an object by means of a
computer.

10   Such a method and arrangement are known from computer
technology or from commercially available computers.
They permit data to be stored on different storage
media, for example in a main memory or on a hard disk.
Nowadays a large number of types of memory are

15   available, a selection is: RAM, ROM, hard disk,
diskette, moving head disk, CDPROM.

When processing large quantities of data, for example
during digital image processing, the general aim is to

20   ensure rapid processing in order, despite the
requirement for real-time capability with moving
images, to be able to carry out a large number of
calculations in order, for example, to ensure high
image quality in the event of a transmission channel

25   experiencing interference, or in order to be able to
make optimum use of a small bandwidth with images with
as a high resolution as possible.
In such a context, an image is modified by means of
what is referred to as a converter which transforms an

30   image into a mapping determined by the values of the
parameter as a function of, in most cases, a plurality
of parameters. Such transformation/mapping requires a
period of time which cannot be ignored, in particular
when processing images. If an image which is modified

35   according to the predefined definition is to be
converted at every access operation, there is a
significant loss of performance, which considerably
adversely affects the efficiency of a system

particularly in the case of image processing. This is also aggravated by the

fact that in numerous applications a plurality of the abovementioned converters are connected in series, and accordingly a large number of mappings have to be

5   carried out.

The objective of the inventive consists in disclosing a mechanism which permits a significant saving in time when accessing an object, and in which in particular

10   the object is stored in an advantageous way.

This objective is achieved in accordance with the features of the independent patent claims. Developments of the invention can be found in the dependent claims.

15

In order to achieve the objective, a method for storing an object by means of a computer is disclosed in which a second object is determined by a first object being modified by means of a predefined process which has at

20   least one parameter. An index is determined by reference to the at least one parameter. The second object is stored in a memory, referencing of the second object being carried out by reference to its index.

25   One embodiment consists in modification being carried out by means of a plurality of processes. Here, each of the plurality processes can have one or more parameters.

30   One development consists in the fact that the index is determined as a uniquely defined index. The uniquely defined index permits an unmistakable identification of the stored second object.

35   It is to be noted here that referencing is understood to be referral to the stored object, preferably by the index. This referencing can be carried out by storing

the index in conjunction with an entry address for the
stored second object. This can be carried out, for
example, by means of a table, and when the index is
accessed

the entry address for the second object which is being looked for in the memory is obtained from the table. This entry address can be implemented as an offset or as a pointer to the storage location.

5

Alternatively, the referencing can be carried out by storing the index together with the second object in the memory. In this case, an access can take place by searching the memory for the index.

10

A combination of the two aforesaid referencing possibilities is also possible.

In addition, there is a development in which before the

15   second object is stored it is compressed. The compression advantageously results in a significant reduction in the storage space required to store the second object.

20   In order to achieve the objective, a method for accessing an object by means of a computer is also disclosed in which an index is determined from at least one parameter of a process. This index is used to dereference a second object. If a stored second object

25   can be found with respect to the index, this second object is accessed; if a second object cannot be determined with respect to the index, a predefined first object is determined by means of the process while taking into account its at least one parameter

30   with respect to a new second object. The access is made to the newly determined second object.

One development consists in the fact that the new second object is stored in accordance with the method

35   described above.

In particular, instead of the one process, a plurality of processes can be used, each of the plurality of processes having a predefinable number of parameters.

5 There is also an embodiment in which an already stored object can also be accessed if the at least one parameter is similar to the at least one parameter of the already stored second object within a predefined tolerance. This has the particular advantage that
10 within this tolerance an already stored second object is accessed in all cases, and the second object does not need to be newly determined or calculated specially.

15 There is also a development in which the object contains information which can be displayed.

In particular, the object can be a digital image.

20 An additional embodiment consists in the fact that the process is a converter for modifying image data. In this case the at least one parameter of the process (of the converter here) is a specific variable for influencing this image data.
25
A significant advantage of the invention consists in the fact that the direct memory access to an object which has already been determined eliminates the laborious and time-consuming new calculation (by means
30 of the at least one process). The direct access to the memory is in all cases quicker and the elimination of the new determination has positive effects on the performance and the resources of the system.

35 It is to be noted here that the aforesaid memory comprises, in particular, the customary types of memory: RAM, mass storage, hard disk, etc.

In order to achieve the objective, an arrangement for storing an object by means of a computer is also disclosed in which arrangement a processor unit is provided which is configured in such a way that

5   a) a second object can be determined by a first object being modified by a predefined process which has at least one parameter;

        b) an index can be determined by reference to the at least one parameter;

10   c) the second object is stored in a memory, referencing of the second object being carried out by reference to its index.

In order to achieve the objective, an arrangement for
15 accessing an object by means of a computer is also disclosed, which arrangement has a processor unit which is configured in such a way that

        a) an index can be determined from at least one parameter of a process;

20   b) dereferencing of a second object takes place by reference to the index;

        c) if a stored second object can be determined with respect to the index, this second object is accessed;

25   d) if a second object cannot be determined with respect to the index, a new second object is determined from a predefined first object by means of the process, and this newly determined second object is accessed.

30

These arrangements are in particular suitable for carrying out the method according to the invention or one of its developments explained above.

35 Exemplary embodiments of the invention are presented and explained below with reference to the drawing.

In said drawing:

Fig. 1   shows an outline with logic blocks of a method
          for storing an object;

Fig. 2   shows an outline with a first referencing
          possibility;

Fig. 3   shows an outline with a second reference
          possibility;

Fig. 4   shows an outline illustrating an access to an
          object;

Fig. 5   shows a processor unit which can be used as a
          computer.

Fig. 1 illustrates an outline with logic blocks of a
method for storing an object. A first object 101 is
firstly subjected to conversion with the parameters p1,
p2, p3 in a converter 104 in a processing block 103.
Compression (cf. block 105) and determining of an index
(cf. block 106) are then carried out. During the
determining of an index a value (index) is uniquely
determined from the first object and the method of
conversion (number of processes with values of the
respective parameters). To do this, an identification
variable 108 is preferably determined from the first
object which variable is also taken into account in the
determining of the index. The identification variable
108 permits uniquely defined assignment or virtually
uniquely defined assignment of the first object 101 to
the identification variable is 108. Various methods of
doing this are known, for example an assignment by
means of an Internet link (URL address). The index
determining means 106 supplies a uniquely defined index
107, the compression means 105 supplies a

second object 102 on which the conversion 104 and compression 105 have been performed.

Fig. 2 and Fig. 3 each show an outline with a
5   referencing possibility. Fig. 2 contains a storage area 201 in which the second object (indicated here by the area 203) is stored. The index 202 (corresponds to the index 107 determined according to Fig. 1) is preferably located at the start of the stored second object 203.
10   By reference to the index 202, it is possible to find the second object again in the storage area 201.

Another possibility shown by Fig. 3: in order to access a storage area 301 quickly, a table 305 is provided
15   which comprises an index field 303 and a pointer 302. The pointer 302 points directly to an address within the storage area 301. Instead of the pointing mechanism, an offset, which to the same extent differentiates, in the storage area 301, the entry
20   address for the object associated with index 303, can form in the table entry 302. In Fig. 3, the second object is indicated by the area 304, and the pointer 302 points to the start of the second object 304. If the second object 304 is being looked for by reference
25   to its index 303, all that is necessary is to search through the table 305 for the index, and the field of the pointer 302 which is associated with the index directly supplies the start address within the storage area 301 for the second object 304.
30

Fig. 4 shows an outline which illustrates an access to an object. A first object 401 and a conversion function (a process) 402 with parameters p1, p2 and p3 are given. By reference to the first object, an
35   identification variable 403 is determined, and a subindex TIx 404 is determined from the conversion function which can optionally include a plurality of

converters. Both variables 403 and 404 together yield
the index Ix. The index Ix is used to look for a second
object which has already

been stored in a storage area and which results from the first object after the process 402 has been carried out (cf. 405). If the search is successful, the found object is accessed (cf. block 407), and otherwise the

5   second object is newly calculated and this newly calculated object is accessed (cf. block 408). The decision as to whether an access or a new calculation must take place is made in a block 406.

10 Fig. 5 illustrates a processor unit PRZE. The processor unit PRZE comprises a processor CPU, a memory SPE and an input/output interface IOS which is used in different ways via an interface IFC: Via a graphic interface, output can be viewed on a monitor MON and/or

15 is issued on a printer PRT. An entry is made via a mouse MAS or a keyboard TAST. The processor unit PRZE also has a data bus BUS, which ensures the connection of a memory MEM, of the processor CPU and of the input/output interface IOS. Furthermore, additional

20 components, for example additional memory, data memory (hard disk) or scanner, can be connected to the data bus BUS.

Patent claims

1. A method for storing a second object by means of a computer,

   5   a) in which the second object is determined by a first object being modified by a predefined process which has at least one parameter;

   b) in which an index is determined by reference to the at least one parameter;

   10   c) in which the second object is stored in a memory, referencing of the second object being carried out by reference to its index.

2. The method as claimed in claim 1, in which the modification is carried out by means of a plurality of processes.

3. The method as claimed in claim 1 or 2, in which the index is determined as a uniquely defined index.

4. The method as claimed in one of the preceding claims, in which the referencing is carried out by storing the index with an entry address in the memory for the second object.

5. The method as claimed in one of claims 1 to 3, in which the referencing is carried out by storing the index for the second object in the memory.

6. The method as claimed in one of the preceding claims, in which before the second object is stored it is compressed.

7. A method for accessing a second object by means of
    a computer,
    a) in which an index is determined from at least
       one parameter of a process;
    b) in which dereferencing of the second object
       takes place by reference to the index;
    c) in which, if a stored second object can be
       determined with respect to the index, this
       second object is accessed;
    d) in which, if a second object cannot be
       determined with respect to the index, a new
       second object is determined from a predefined
       first object by means of the process, and this
       newly determined second object is accessed.

8. The method as claimed in claim 7, in which the new
    second object is stored in accordance with one of
    claims 1 to 6.

9. The method as claimed in claim 7 or 8, in which a
    plurality of processes are used for determining
    indices or for determining the second object from
    the first object.

10. The method as claimed in one of claims 7 to 9, in
    which the stored object is accessed if the at
    least one parameter corresponds, with a predefined
    tolerance, to the at least one parameter of the
    already stored second object.

11. The method as claimed in one of the preceding
    claims, in which the object comprises information
    which can be displayed, in particular a digital
    image.

12. The method as claimed in one of the preceding
    claims, in which the process is a converter for
    modifying image data.

13. The method as claimed in claim 12, in which the at least one parameter is a specific variable for influencing the image data.

5 14. An arrangement for storing a second object by means of a computer,
in which a processor unit is provided which is configured in such a way that
d) the second object can be determined by a first
10   object being modified by a predefined process which has at least one parameter;
e) an index can be determined by reference to the at least one parameter;
f) the second object is stored in a memory,
15   referencing of the second object being carried out by reference to its index.

15. An arrangement for accessing a second object by means of a computer,
20 in which a processor unit is provided which is configured in such a way that
e) an index can be determined from at least one parameter of a process;
f) dereferencing of the second object takes place
25   by reference to the index;
g) if a stored second object can be determined with respect to the index, this second object is accessed;
h) if a second object cannot be determined with
30   respect to the index, a new second object is determined from a predefined first object by means of the process, and this newly determined second object is accessed.
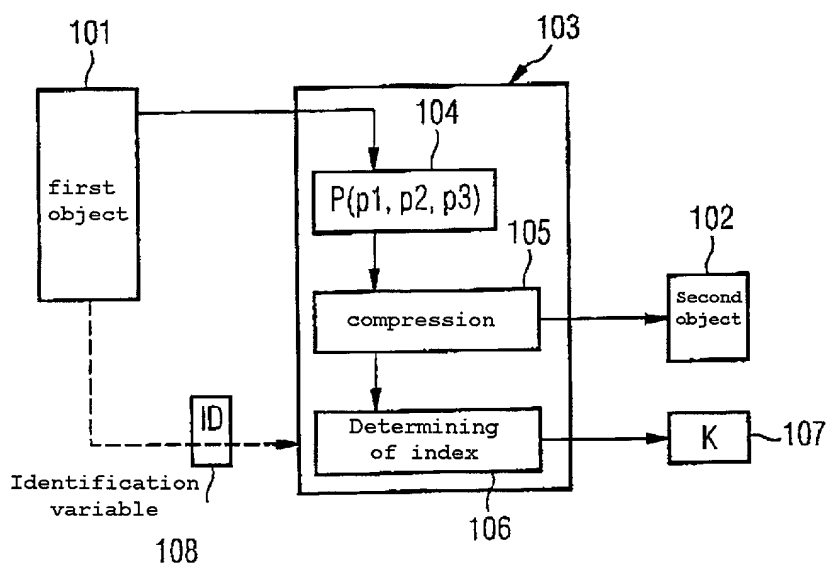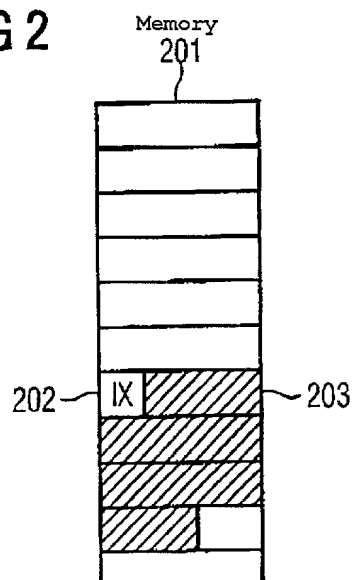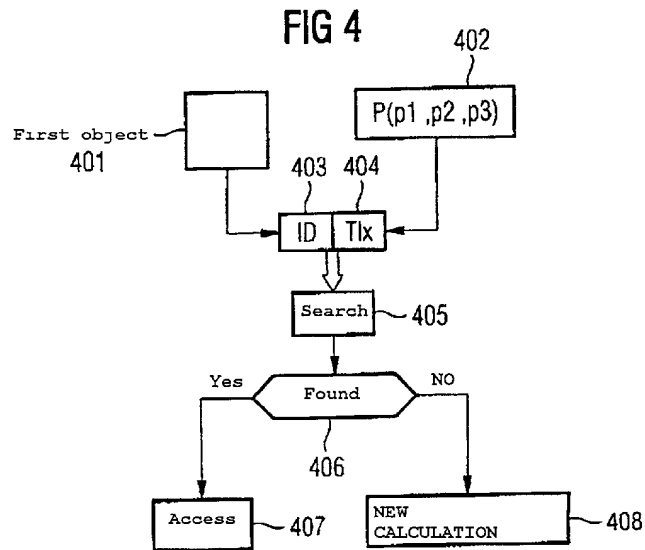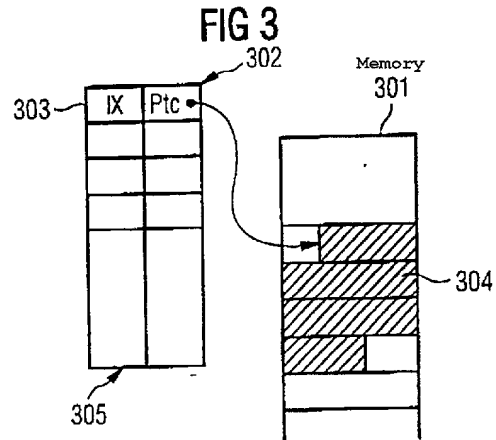
FIG 1

FIG 2

Memory
201
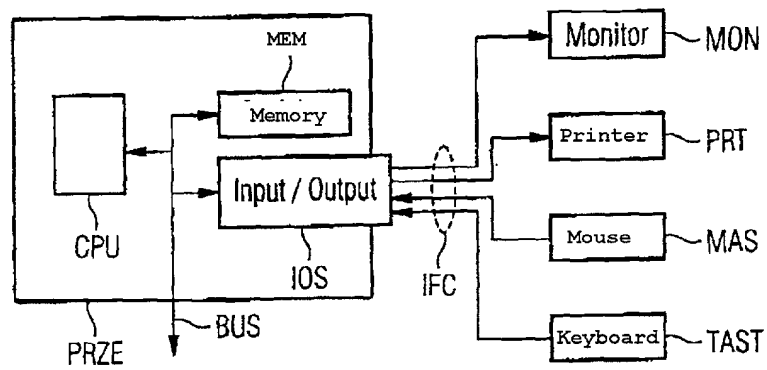
FIG 3

FIG 4

3/3

FIG 5

Declaration and Power of Attorney For Patent Application
Erklärung Für Patentanmeldungen Mit Vollmacht
German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

As a below named inventor, I hereby declare that:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

My residence, post office address and citizenship are as stated below next to my name,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

VERFAHREN UND ANORDNUNG ZUM ABSPEICHERN UND ZUM ZUGRIFF AUF EIN OBJEKT DURCH EINEN RECHNER

METHOD AND DEVICE FOR THE STORAGE AND ACCESSING OF AN OBJECT BY A COMPUTER

deren Beschreibung

(zutreffendes ankreuzen)
- [ ] hier beigefügt ist.
- [X] am __04.02.2000__ als
PCT internationale Anmeldung
PCT Anmeldungsnummer _____PCT/DE00/00348
eingereicht wurde und am _____
abgeändert wurde (falls tatsächlich abgeändert).

the specification of which

(check one)
- [ ] is attached hereto.
- [X] was filed on ___04.02.2000___ as
PCT international application
PCT Application No. ____PCT/DE00/00348
and was amended on _____
(if applicable)

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

IDNR: 2590 / V: 99-1.00 / B:Val

Page 1

German Language Declaration

Priority Claimed

<u>19906211.0</u>   <u>DE</u>   <u>15.02.1999</u>
(Number)   (Country)   (Day Month Year Filed)
(Nummer)   (Land)   (Tag Monat Jahr eingereicht)

☒ Yes / Ja   ☐ No / Nein

(Number)   (Country)   (Day Month Year Filed)
(Nummer)   (Land)   (Tag Monat Jahr eingereicht)

☐ Yes / Ja   ☐ No / Nein

(Number)   (Country)   (Day Month Year Filed)
(Nummer)   (Land)   (Tag Monat Jahr eingereicht)

☐ Yes / Ja   ☐ No / Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozeßordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35. United States Code. §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occured between the filing date of the prior application and the national or PCT international filing date of this application.

<u>PCT/DE00/00348</u>   <u>04.02.2000</u>   <u>anhängig</u>   <u>pending</u>
(Application Serial No.) (Filing Date D, M, Y) (Status) (Status)
(Anmeldeseriennummer) (Anmeldedatum T, M, J) (patentiert, anhängig, aufgegeben) (patented, pending, abandoned)

(Application Serial No.) (Filing Date D,M,Y) (Status) (Status)
(Anmeldeseriennummer) (Anmeldedatum T, M; J) (patentiert, anhängig, aufgeben) (patented, pending, abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden koennen, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

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POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

Customer No. 21171

And I hereby appoint

Telefongespräche bitte richten an: *(Name und Telefonnummer)*

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Ext. _____

Postanschrift:

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Customer No. 21171

Voller Name des einzigen oder ursprünglichen Erfinders:		Full name of sole or first inventor:	
HANS-GEORG BAUMGARTEN		HANS-GEORG BAUMGARTEN	
Unterschrift des Erfinders	Datum	Inventor's signature	Date
	16.8.2001		
Wohnsitz		Residence	
MUENCHEN, DEUTSCHLAND		MUENCHEN, GERMANY	
Staatsangehörigkeit		Citizenship	
DE		DE	
Postanschrift		Post Office Address	
SEDANSTR. 32		SEDANSTR. 32	
81667 MUENCHEN		81667 MUENCHEN	

Voller Name des zweiten Miterfinders (falls zutreffend):		Full name of second joint inventor, if any:	
ERICH INO		ERICH INO	
Unterschrift des Erfinders	Datum	Second Inventor's signature	Date
	21.8.01		21.8.01
Wohnsitz		Residence	
MUENCHEN, DEUTSCHLAND		MUENCHEN, GERMANY	
Staatsangehörigkeit		Citizenship	
DE		DE	
Postanschrift		Post Office Address	
BAADERSTR. 11		BAADERSTR. 11	
80469 MUENCHEN		80469 MUENCHEN	

(Bitte entsprechende Informationen und Unterschriften im Falle von dritten und weiteren Miterfindern angeben).

(Supply similar information and signature for third and subsequent joint inventors).

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